




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
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BOSTON, MASSACHUSETTS 02114-2023

Memorandum

Date: August 8, 2013

Subj: Remedial Action Complete – Operable Unit 4
Naval Weapons Industrial Reserve Plant, Bedford, MA

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To: File



The Site

The Naval Weapons Industrial Reserve Plant (NWIRP) Bedford is located in the Town of Bedford, Massachusetts, approximately 15 miles northwest of Boston. The 46-acre facility is owned by the U.S. Navy (Navy) and was previously operated by the Raytheon Company of Waltham, Massachusetts (Raytheon) from its inception during the mid-1950s until December 2000. The mission of NWIRP Bedford was to design, fabricate, and test prototype equipment for missile guidance and control systems. The property has remained vacant since 2000, except for the Navy's operation of a groundwater extraction and treatment system.

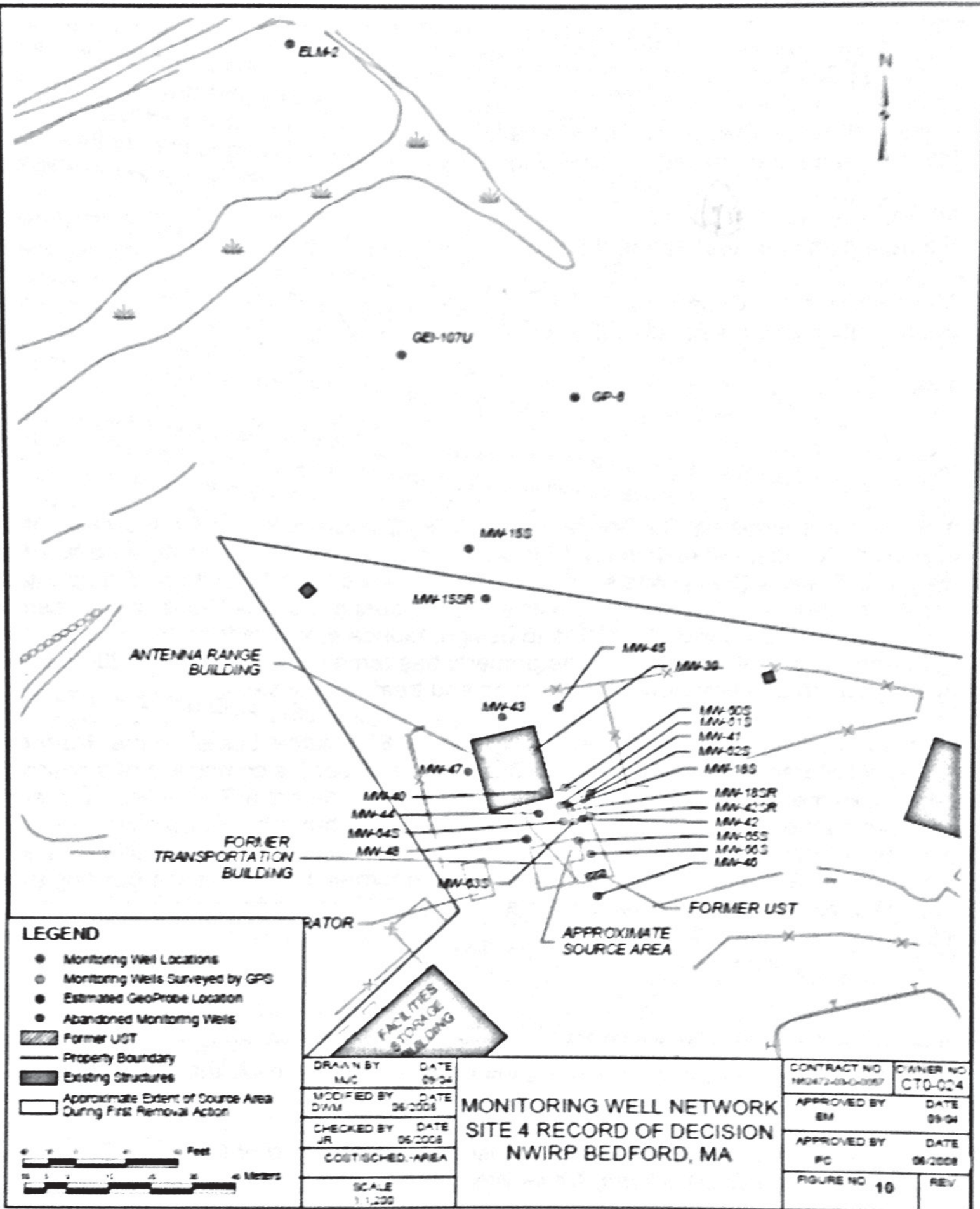
OU4, a benzene, toluene, ethylbenzene, and xylene (BTEX) plume located in the "Northern Activity" of NWIRP Bedford (the property north of Hartwell Road) is comprised of a source area (located between the former Transportation Building and the Antenna Range Building) and a narrow contaminant plume in groundwater that extended north-northwest from Hartwells Hill. Contaminants of Concern (COCs) are BTEX, naphthalene, and 2-methylnaphthalene. The groundwater plume is the result of a combination of the former Transportation Building (vehicle maintenance) operations and a release from a former 7,600-gallon gasoline underground storage tank (UST).

The Remedy

Accessible soil in the vicinity of the UST was excavated during the tank removal activities from December 1998 to January 1999. Following the original UST removal, the Navy completed two additional source area cleanup actions (in-situ chemical oxidation and in-situ thermal treatment).

The Remedial Action Objectives (RAOs) established by the *Record of Decision (ROD), Operable Unit 4 – Site 4 BTEX Plume, Naval Weapons Industrial Reserve Plant, Bedford, Massachusetts, September 2009* (Navy, 2009) protect human health and the environment through:





Site Map

- Elimination of potential future risks to humans using groundwater from OU4 as a drinking water supply by restoring the aquifer to drinking water quality by reducing COC concentrations to below federal and state maximum contaminant levels (MCLs) and federal non-zero maximum contaminant level goals (MCLGs), or, if an MCL or MCLG is not available for a chemical, reducing COC concentrations to below a site-specific risk-based cleanup level.
- Minimization or elimination of the migration of COCs from the source area to the groundwater plume by reducing COC concentrations in the source area.

To achieve these RAOs the ROD specifies Monitored Natural Attenuation (MNA) of residual COC concentrations in groundwater. The ROD specified cleanup goals for benzene, toluene, ethylbenzene, and 2-methylnaphthalene in groundwater. No cleanup goals were established for total xylenes or naphthalene because those compounds are not associated with the excess site risks targeted for mitigation; however, the ROD specified that total xylenes and naphthalene concentrations are to be monitored in groundwater because they are associated with the original release to the environment.

In March 2013, the Navy conducted groundwater monitoring at OU4 as part of the first quarterly and first semi-annual monitoring event. Results of the event indicate that cleanup goals remain in exceedance at two wells, however concentration trends indicate a decrease. Even in instances of slight year over year upticks, the decreasing trends are expected to continue. The Navy continues to monitor the well network and evaluate MNA performance. Proposed timeframes for achieving RAOs contained in the ROD (<10 years) remain realistic.

Institutional controls consist of a Navy Instruction maintained by Naval Sea Systems Command (NAVSEA). The Instruction is a Navy directive prescribing authority and assigning responsibility for compliance with the institutional controls. The instruction is enforced through designated Navy chain-of-command. In the event of property transfer, institutional controls will be incorporated into a deed restriction. Any deeds or leases will have a description of the residual contamination on the property and the environmental use restrictions, expressly prohibiting activities inconsistent with the performance measure goals and objectives.

Specific Land use Controls (LUCs) implemented at OU4 are:

- Prohibit use of the OU4 groundwater aquifer as a drinking water supply until groundwater COC concentrations achieve cleanup goals.
- Prohibit residential redevelopment of the OU4 property until a CERCLA risk assessment is performed to quantitatively demonstrate that OU4 soil poses no unacceptable risks to future residents.
- Restrict occupancy of current and future OU4 structures until a CERCLA risk assessment is performed to quantitatively demonstrate that vapor intrusion from OU4 soil poses no unacceptable risks.

The Navy will maintain institutional controls at OU4 until the concentrations of hazardous substances have been reduced to levels that allow for unlimited exposure and unrestricted use, as determined by the monitoring program.

Conclusion

A site inspection was conducted on May 1, 2013 to verify site conditions. All ROD elements have been successfully completed and LUCs established. Accordingly, EPA concludes that the Navy has satisfied the requirements for Operable Unit 4 Remedial Action Completion at Portsmouth Naval Shipyard.